

ORIGINAL RESEARCH

The Impact of Reforms of National Health Insurance on Solidarity in the Netherlands: Comparing Health Care Insurance and Long-Term Care Insurance

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Context: Throughout Europe, the financial risks of health and long-term care are covered to varying degrees through models of national (health) insurance. Such insurance draws upon the principle of solidarity. Much is unknown on the solidarity-effects of reforms in national insurance schemes.

Objective: To present an empirical analysis of the effects of recent reforms in national health insurance on solidarity in one country.

Methods: We conducted a comparative analysis of the 2006 health care insurance reform and the 2015 long-term care insurance reform in the Netherlands. A multidimensional analytical framework of solidarity was developed to study the solidarity-effects of both reforms.

Findings: Reforms of health care and long-term care insurance in the Netherlands had some solidarity effects, but they should not be overstated. We found evidence for increased and decreased solidarity. Health care insurance seems more 'immune' to reductions in solidarity than long-term care insurance.

Limitations: The present case study involves reforms in the Netherlands. The solidarity framework is specifically designed for the study of solidarity-effects of reforms on national health and long-term care insurance. Effects on informal arrangements for care are beyond the scope of this study. More detailed and quantitative research is required to investigate how the reforms played out for specific groups, for instance the frail elderly, people with a disability and people with rare conditions. Similarly, long-term effects require further investigation.

Implications: Given the limited scope of our analysis, more comparative research (including on an international scale) is required to develop systematic insight into the solidarity-effects of reforms in national health and long-term care insurance.

Keywords: Solidarity; health care insurance; long-term care insurance; Netherlands

Introduction

Protecting people against the financial risk of illness has always been the leading motive of governments in advanced democratic countries (and elsewhere) to introduce national health insurance, financed either by social contributions or taxes (Mossialos et al., 2002; Saltman et al., 2004). National health insurance draws upon the concept of solidarity, which holds that citizens, at least to some extent, should share costs to guarantee access to health services (Saltman, 2015; Stjernø, 2009; Ter Meulen et al., 2001). Since its inception, the scope of national health insurance has gradually extended in terms of people and services (Companje et al., 2009).

Nowadays, in almost all European OECD-countries, public health expenditures account for at least 70 percent of total health expenditures, and the percentage of the population covered by national health insurance is almost everywhere close to 100 percent (OECD, 2017). Nevertheless, one also finds remarkable differences. An important difference regards the fraction of long-term care in total health expenditures (Colombo et al., 2011; Companje, 2014). For instance, using data from 2015, the share of residential care in total health expenditures is much higher in Norway (16.4%), Sweden (16.2%) and the Netherlands (24.5%) than in Belgium (10.3%), France (6.9%) and Germany (8.9%) (own calculation based on OECD health data 2017).

Growing concerns on escalating expenditures altered the health policy agenda in the 1970s (Cutler, 2002). Cost control evolved as an important health policy issue, for instance by cutting prices, setting expenditure ceilings, introducing co-payments, priority setting, hospital planning, tightening guidelines for need assessment, removing

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health services from the benefit package, and so forth (Stadhouders et al., 2016). Some countries implemented major reforms in national health insurance (Carrera et al., 2008; Maarse et al., 2015; Stadhouders et al., 2016; Thomson et al., 2013).

A great deal of empirical research of cost control and health insurance reform concentrates on their effect upon health expenditures and the organisation of health services (OECD, 2015; OECD, 2018; Stadhouders et al., 2018). This article follows a different approach by putting the focus on the impact of reforms on solidarity. The study of the solidarity effect of reforms is an important topic of research not only because it has been rather neglected so far (some exceptions are Stock et al., [2007] and Maarse and Paulus [2003]), but also because reforms may have consequences for solidarity. It is no coincidence that the Council of the European Union emphasized the need to respect social values in reforms (Council of the European Union, 2006). Evidence on the solidarity effect of reforms is a valuable complement to evidence on their effects on expenditures and organisation of health and long-term care services. Another reason to focus on solidarity-effects is the concern that demographic and cultural changes, as well as rising health expenses, may put solidarity under strain in the (near) future (Jeurissen & Sanders, 2007).

To gain insight into the effects of reforms on solidarity in national health insurance, this article compares two recent reforms in the Netherlands. The first is the introduction of a new health insurance scheme in 2006, and the second reform is the overhaul of long-term care insurance in 2015 (Schut et al., 2013). The policy objectives of both reforms were related to solidarity, though each in its own way. An important objective of the 2006 reform was to reinforce solidarity in health care insurance by the introduction of a single national scheme to put an end to the traditional separation between social and private health insurance. The 2015 reform of long-term care insurance was also intended to preserve solidarity into the future. One reason the government held a reform as necessary was to prevent escalating expenses that would put solidarity in long-term insurance under strain.

Our research questions are twofold: First, what are the effects of the 2006 reform of health insurance and the 2015 reform of long-term care insurance on solidarity in health care and long-term care, respectively? Second, did these reforms have similar or different effects on solidarity in health care insurance and long-term care insurance?

The concept of solidarity

Solidarity lacks a common understanding. In the literature (mainly philosophical and sociological), one finds many conceptualizations of solidarity and many types of solidarity (Bayertz et al., 1999; Ter Meulen, 2017). The motives for solidarity also diverge and may change over time (Clasen and Van Oorschot, 2002). Solidarity is closely related to deservingness, but the questions of who deserves what, when and how yields different answers (Van Oorschot, 2000). Another problem is the radical absence of a single way to translate solidarity in practice (Saltman, 2015). Policymakers who declare adherence to

the principle of solidarity may nevertheless have quite different ideas about how to shape a solidary health insurance scheme in practice.

The focus in this article is upon formal solidarity in national health and long-term care insurance. Solidarity in this specific context means people are somehow protected against the financial risk of illness by sharing the costs of health care (e.g., the costs of doctor consultations, hospital care and prescription medicines) and the costs of long-term care (e.g., the costs of nursing home care). The purpose of national health and long-term care insurance arrangements is to remove financial obstacles to the utilization of health and long-term care services. In other words, these arrangements are an important instrument for improving access to health and long-term care services.

The focus on solidarity in national insurance schemes implies that informal solidarity arrangements in paying for health and long-term care (e.g., family solidarity) are left out of consideration. This also applies to other types of informal care (e.g., caring for one's family members, friends or neighbors) and solidarity arrangements organized by voluntary and charitable organizations. Furthermore, we pay attention to intergenerational solidarity.

Analytical framework

To study the solidarity effects of health insurance reforms, we developed an analytical framework of solidarity. This framework has two main dimensions: coverage and financing. Each dimension consists of several sub-dimensions (see **Table 1**). Thus, solidarity is conceptualized as a multidimensional concept.

National health insurance differs in several respects from private health insurance. Most private insurance policies are based on the principle of actuarial fairness, also known as the equivalence principle. This principle holds that the policy holder's premium is related to risk: higher risks are 'normalized' by higher premiums (absence of risk solidarity). Many private plans also include access restrictions by instituting exclusion waivers for pre-existing medical conditions or non-acceptance (Stone, 1993; Light, 1992; Lehtonen & Liukko, 2011). Material coverage and cost coverage are often less extensive in private health plans than in national health insurance. Income solidarity is also uncommon in private plans. In short, private health insurance is much less solidary than national health insurance. Another important difference is the mandated structure of national health insurance, which means that solidarity in national health insurance is imposed or obligated solidarity. Its mandated structure raises the question of public support for national health insurance. The same issues apply if considering insurance for long-term care. However, this question is beyond the scope of this article (Gevers et al., 2000).

Methods

To investigate the solidarity-effects of the reform of health care insurance and long-term care insurance in the Netherlands, we performed a qualitative analysis of government policy documents to determine a solidarity-score for each dimension in the pre-reform period and the score in the after-reform period. Comparison of these

Table 1: A multidimensional model of solidarity.**COVERAGE**

Population coverage (breadth) refers to the portion of the population covered by national health and long-term care insurance. National health insurance is considered more solidary if it covers a greater portion of the population. Insurance schemes that give specific groups of people the option to take out substitute private health insurance (e.g., Germany) is less solidary than schemes covering the entire population. Solidarity is also less in countries where only specific categories of people are eligible for national health legislation (e.g., the Netherlands before the 2006 reform).

Material coverage (depth) refers to the package of health and long-term care services covered. National insurance is considered more solidary if it covers a broader set of services.

Cost coverage (height) refers to the percentage of the costs of health and long-term care services covered. National insurance is considered more solidary if it covers a greater portion of the costs. Co-payments reduce cost coverage and, hence, solidarity.

Conditional coverage refers to conditions that must be met to qualify for coverage. Restrictions to coverage (e.g., the requirement that people must quit smoking to qualify for expensive medical care) are considered less solidary than arrangements without restricting conditions.

FINANCING

Income solidarity means that financing rests upon the principle of ability-to-pay. The more national health and long-term care insurance schemes draw upon this principle, the higher the extent of solidarity in financing.

Risk-solidarity holds that a policyholder's health condition is not taken into account in rate-setting. Insurers are also forbidden to apply exclusion waivers or to deny applicants access to insurance. National health and long-term care insurance schemes respecting the principle of risk solidarity are considered more solidary than arrangements that deviate from this principle.

scores gives insight into the consequences of the reforms for solidarity. In this respect, a number of remarks are important.

First, we determine the 'solidarity-score' for each dimension separately and abstain from aggregating the scores into a composite score. This method enables us to identify the multiple effects reforms may have on solidarity. A composite score would also require a weighting procedure. However, attaching weights requires a political judgment of the relative importance of each dimension, which is beyond the scope of our analysis. For this reason, we abstained from a weighting procedure. Hence, in our analysis a change in the score on population coverage is considered as equally important as a change in the score on risk-solidarity.

Second, changes in solidarity are classified into four categories: more solidary, less solidary, no change and mixed change. The classification was performed by a multidisciplinary team consisting of one PhD-researcher, two health economists, one expert in social security legislation with a legal background and one health policy expert with a background in political science.

Third, it is important to emphasize that the solidarity-effects are dependent on one's original position. As will be shown below, the effects for people who in the pre-reform period were covered by the sick fund scheme (sick fund insured people) can differ from the effects for persons with a private scheme (privately insured people). The effects for privately insured people are contingent on the specific regulations in their private plan and their personal situation (e.g., single or married, number of children and age).

Fourth, to get a good picture, it is necessary to study the longitudinal solidarity-effects of reforms. Their immediate effects (effect in the first year of implementation) may differ from their effects over a longer period.

Solidarity in the pre-reform period**Health care insurance**

Until 2006, approximately two-thirds of the population was covered by the Sick Fund Act (*Ziekenfondswet*), a social arrangement based on the German 'Bismarck' model of statutory health insurance and in force since 1964. The sick fund scheme covered employees with earnings under a state-set earnings ceiling (yearly adapted by the government). Employees with earnings above this ceiling were not eligible. Most of them purchased a private health insurance policy as a substitute (Vonk, 2013). There were also two specific sick fund schemes in place, one for self-employed workers and another for the elderly. The sick fund scheme covered a wide range of medical services, including family care, specialist care, hospital admissions, pharmaceuticals and many others. Because co-payments were largely absent, cost coverage was very high. Conditions for coverage did not exist.

As regards financing, the scheme also featured a high degree of solidarity: contributions were income-related (with a cap) and not linked to medical risk (Kroneman et al., 2016). In contrast, the arrangements in private health insurance were less solidary. Private insurers could deny applications, restrict coverage and charge risk-related premiums. In practice, they usually applied a combination of community-rating and risk rating. Particularly in the 1970s and early 1980s, the private health insurance market ran into trouble. Some groups (e.g., self-employed people on low income) had great difficulty in purchasing a private plan. Private insurers also undermined the financial stability of the sick fund scheme of the self-employed by offering preferred risk groups an attractive premium. To tackle both problems, the government introduced temporary reforms to protect solidarity in private health insurance and to improve solidarity between the sick fund insured and persons with private health insurance (Schut, 1995).

Long-term care insurance

The Netherlands was the first country in Europe that introduced a separate national insurance scheme for long-term care (Companje, 2014). The Exceptional Medical Expenses Act (*Algemene Wet Bijzondere Ziektekosten*) came into force in 1968 and was shaped as a statutory scheme covering the entire population (universal coverage). Initially, the material coverage of the scheme was limited and only included nursing home care and residential care for people with a handicap. In the course of time, however, the benefit package extended, with ever more services in a residential and non-residential setting. The scheme covered both services of long-term health care (e.g., nursing home care, personal health care services) and social services of long-term care (e.g., household services, public transportation and personal guidance). The bulk of long-term care is provided as benefit-in-kind (Kroneman et al., 2016; Mot, 2010; Schut & Van den Berg, 2010). However, since 1995 clients may apply for a publicly-funded cash benefit to pay for long-term care. Cost coverage has always been extensive (see **Table 3**). Co-payments were related to income, type of care, assets and family situation (single or living together). Means testing has always been forbidden. To be eligible for long-term care, an applicant had to undergo a need assessment procedure. The financing of long-term care insurance was solidarity-based: contributions were income-related (a fixed percentage of earnings set annually by the state) and not related to health risk. Taking an international-comparative perspective (Companje, 2014), the Dutch system of long-term care can be depicted as a formalized and rather generous system that is for the most part publicly financed. The provision of long-term care services is in the hands of private not-for-profit providers. Long-term care is also expensive: in 2014 its share in gross domestic product was 4.3% (compared to 5.4% for health care). It was for

this reason that one observer called Dutch long-term care ‘world champion’ long-term care (Companje, 2014).

Solidarity in health care insurance after reform

Health care insurance underwent a major reform in 2006 (see also **Table 2**). The introduction of the Health Insurance Act (*Zorgverzekeringswet*) integrated the former sick fund scheme and all private health insurance schemes in a mandatory basic health insurance scheme covering all legal residents of the Netherlands. Each person is free to choose his/her insurer and may switch to another insurer by the end of each year (6.4% did so in 2017 [Vektis, 2018]). Legislation obligates insurers to accept each applicant (open enrolment). Since 2008, health insurance contains a mandatory deductible set by the minister of health (see next section for more details). The minister of health also determines the benefit package of the basic schemes. Subscribers pay both a nominal (flat-rate) premium and income-related contribution (capped). While the minister of health sets the contribution rate, health insurers set the nominal premium of their own health policies. However, they are forbidden to apply risk-rating; community-rating is obligated. Free premium-setting is intended to spur competition in health insurance. The policy assumption is that competition will incentivize insurers to increase efficiency in contracting with providers. Preferred risk selection is forbidden. A complex risk equalization scheme is in place to compensate insurers for differences in risk profile. The state pays the premium for children under 18. Nominal premiums, the mandatory deductible and the state grant for children account for 50% of all revenues; the remaining 50% is covered by the income-related contributions.

Solidarity effects of the health care reform

How did the reform of health insurance influence solidarity? As discussed earlier, we address this question for each dimension of solidarity separately.

Table 2: Main characteristics of recent reforms in health care insurance and long-term care insurance.

	Reform of health care insurance (2006)	Reform of long-term care (2007 and 2015)
Reform objectives	<ul style="list-style-type: none"> • Strengthening solidarity • Strengthening efficiency • Enhancing individual choice 	<ul style="list-style-type: none"> • Controlling expenditure growth • Strengthening efficiency • Improving client-orientation • More emphasis on individual responsibility • Preservation of solidarity in future
Insurance landscape before reform*	<ul style="list-style-type: none"> • Sickness Fund Act (66%) • Substitutive private insurance (33%) 	<ul style="list-style-type: none"> • Exceptional Medical Expenses Act (AWBZ) (100%)
Insurance landscape after reform*	<ul style="list-style-type: none"> • Health Insurance Act 2006 (100%) 	<ul style="list-style-type: none"> • New Long-term Care Act (2015) • Social Welfare Act (2007), revised in 2015 • Health Insurance Act (2006)
Institutional reforms	<ul style="list-style-type: none"> • Introduction of regulated competition 	<ul style="list-style-type: none"> • Decentralization of social services to local government • Decentralization of community nursing to health insurers
Financial measures	<ul style="list-style-type: none"> • No expenditure cuts • Extra expenses (tax credit system, state grant) 	<ul style="list-style-type: none"> • Expenditure cuts

* Percentages represent the fraction of the population covered.

An important policy objective of the reform was to strengthen solidarity by integrating the sick fund scheme and private health insurance into a single and mandatory scheme covering the entire population. Hence, the reform reinforced solidarity on the dimension of *population coverage*.

The reform had little consequences for *material coverage*. The benefit package of the new scheme largely coincided with the package of the former sick fund scheme and has been subject to adaptations ever since by adding new services and delisting others. Whether material coverage has increased for former privately-insured people is contingent upon the specific regulations in their private insurance policy. However, we expect these changes to be small because private insurers usually copied the benefit package of the sick fund scheme.

The 2006 reform had consequences for sick fund subscribers on the dimension of cost coverage. To reinforce individual responsibility, the new insurance scheme includes a mandatory deductible that has been raised from €150 in 2008 to €385 in 2018. However, GP consultations, health care for children, maternity care and a few other health services are exempted from the mandatory deductible. Policyholders may also opt for a voluntary deductible to a maximum of €500 in exchange for a lower premium (12% did so in 2017; see Vektis [2018]). We conclude that the introduction of the mandatory deductible has decreased cost coverage for former sick fund subscribers. The fraction of private payments in health insurance jumped from 4.2% in 2010 to 7.2% in 2015 (Table 3). The effect of the reform for privately insured persons is contingent on the specific coverage regulations in their policy in the pre-reform era. For most of them, co-payments have decreased.

The increase of the mandatory deductible has been controversial in Dutch health care policymaking, the more so because research suggests it may induce patients to abstain from medical care for financial reasons (Van Esch et al., 2017). Under heavy political pressure, the government decided not to raise the mandatory deductible in 2017 and 2018. This political measure caused a slight drop of the fraction of co-payments for health care. For former privately insured persons, the consequences for cost coverage are contingent on the specific conditions in their private health plan.

The 2006 reform did not change the conditions for the provision of health care, neither for former sick fund subscribers, nor for the former privately insured persons.

The introduction of the new health insurance scheme did not alter risk solidarity for former sick fund subscribers. The new scheme draws upon the principle of risk solidarity.

As spelt out above, legislation includes a ban on risk-rating and preferred risk selection. Insurers were also obligated to accept each applicant. Risk solidarity has increased for former privately insured persons, because risk solidarity was largely absent in private health insurance. They must also pay a premium for their children. Under the new health insurance regime, this is no longer the case, because now the state pays for children under 18.

Without compensatory measures, the raise of the nominal (flat-rate) premium in health insurance from €380 in 2005 to an average of €1060 and an average of €1262 in 2016 (Vektis 2016) would have meant a significant decrease of income solidarity for former sick fund subscribers. To uphold the principle of income solidarity, the government introduced a tax credit system to compensate persons on low income (approximately 3.5 million single persons and 1 million families qualified for this tax credit in 2017 (Budget Estimate Ministry of Health, 2018). Income solidarity is new for persons with private insurance in the pre-reform period.

Solidarity in long-term care insurance after reform

Long-term care was reformed in 2007 and 2015 (see Table 2). The 2007 reform was rather limited in scope and included a transfer of some social services of long-term care (in particular household services) from the benefit package of the Exceptional Medical Expenses Act to the newly introduced Social Welfare Act (*Wet Maatschappelijke Ondersteuning*). The new and tax-funded regime made municipalities responsible for the purchase of these services. Assuming that municipalities could organize the purchase of social services much more efficiently than the former regional care offices, the government imposed an 'efficiency' cut of 10% on the state budget of these services.

A more radical reform with multiple objectives (see Table 2) followed in 2015 (Maarse & Jeurissen, 2016). One reform objective was the preservation of solidarity. In the government's view, solidarity in long-term care insurance would come under increasing strain without radical cost-saving measures to reign in expenditure growth. The willingness of the population to share the costs of others would decline. An important element of the reform was the introduction of the Long-term Care Act (*Wet Langdurige Zorg*) and the simultaneous repeal of the Exceptional Medical Expenses Act. The benefit package of the new scheme is largely limited to 24/7 care in a residential setting. Insurers are responsible for the purchase of community nursing and personal care under the Health Insurance Act and municipalities for the purchase

Table 3: Co-payments (CP) as percentage of expenditures for health care (HCE) and long-term care (LTCE).

	2010	2013	2014	2015	2016	2017	2018
Mandatory deductible (€)	220	350	360	375	385	385	385
CPs as % of total HCE	4.2	6.1	7.0	7.2	7.0	6.9	6.8
CP as % of total LTCE	6.9	7.0	6.7	8.7	9.0	8.7	8.7

Source: Ministry of Health, Annual Budget Estimate.

of services of social support under the revised Social Welfare Act. The new Long-term Care Act is financed by means of income-related contributions set by the state and some tax funding. The Social Welfare Act is a tax-funded scheme.

An important difference between the reform of health care insurance and long-term care insurance is that the reform of long-term care insurance was associated with a substantial budgetary cutback. The initial target was to cut total expenditures by about 10%, but this percentage was reduced to build a political majority in the Upper Chamber and to get support from employer and worker organizations as well as municipalities. The reform of health care insurance did not contain cutbacks, and its introduction cost €4 billion to fund the tax credit system (Maarse et al., 2015).

Solidarity effects of the long-term care reform

How did the reform of long-term care insurance influence solidarity? We follow the same procedure as in the previous section on health insurance reform.

The reforms of long-term care had no repercussions for population coverage. The former Medical Expenses Act and both the new Long-term Care Act and the Social Welfare Act set up universal schemes covering all legal residents in the Netherlands.

The effect of the reforms on material coverage in long-term care is somewhat ambiguous. Most services once covered by the Exceptional Medical Expenses Act are now covered under the Long-term Care Act (mainly 24/7 care in a residential setting), the Health Insurance Act (community nursing) and the revised Social Welfare Act (social services of long-term care). Each of these regimes confer upon clients the right to care, provided they meet the criteria for need assessment. However, there are also some important changes. The new regime no longer covers the costs of residential homes for the elderly (*verzorgingshuizen*). However, the facilities for long-term care at home have been extended ('complete package at home'). Another change is that the revised Social Welfare Act gives municipalities some discretionary room in determining the material coverage of their local social welfare regime (see further conditional coverage).

Long-term care reform had significant consequences for cost coverage (see **Table 3**). The fraction of private co-payments increased from 6.7% in 2014 to 9% in 2016. This rise is controversial, and the new government has announced and taken measures to mitigate the rise of the fraction of co-payments in long-term care insurance (the fraction in 2018 was down to 8.7%). The effects on cost coverage under the Social Welfare Act are different. Legislation offers municipalities much freedom in determining their local co-payment regime. Unfortunately, there are no complete data on the amount of co-payments, but there are indications that many municipalities have taken the opportunity to raise their co-payment rates (many of them are income-related) as compensation for the state-imposed expenditure cuts for social support (De Koster, 2015). The municipalities' discretionary power also caused inter-municipality variation in co-payments (De Koster, 2015). This variation is considered unfair and is one of the reasons

for the new government (in office since 2017) announcing the introduction of a uniform and moderate co-payment regime. Another reason to mitigate the effect of higher co-payment rates. It is no coincidence that municipalities have protested against this measure. Our estimation is that the new arrangement will largely eliminate the initial negative effect on the dimension of cost coverage.

The criteria for need assessment have been tightened under the Long-term Care Act. Only clients who need 24/7 care and for whom no alternative at home is available are admitted to a residential facility. Hence, solidarity on the conditioning dimension of long-term care has decreased. The solidarity-effect is rather complicated for social services covered by the revised Social Welfare Act. Legislation leaves municipalities much policy discretion in setting the criteria for need assessment, although means-testing remains forbidden. This not only enables a legal option for municipalities to condition the eligibility for social support by taking factors such as the rest capacity and the social network of the applicants into account, it also offers them the opportunity to determine what kind of support and how much support applicants qualify for (Hofman & Pennings, 2013). The decentralization of need assessment has caused inter-municipality variation in access to social support services (De Koster, 2015). Recipients consider this variation unfair and a threat to solidarity. However, the municipality's discretionary power is restricted. Some municipalities had to revise their assessment procedures due to court rulings stating these procedures violated the regulations of the Social Welfare Act.

The reform did not affect solidarity on the dimension of income-solidarity and risk-solidarity. As under the previous regime, long-term care is largely financed by income-related contributions and taxes. Risk-rating does not exist.

Table 4 summarizes the results of our analysis.

Discussion

This article presented an analysis of the solidarity-effects of two recent reforms in the Dutch health and long-term care system. Our research questions were (1) what are the effects of the 2006 reform of health insurance and the 2015 reform of long-term care insurance on solidarity in health care and long-term care respectively, and (2) did the reforms have a similar or different effect on solidarity in both insurance schemes?

The following conclusions can be drawn (see **Table 3**). First, reforms have influenced solidarity in both schemes, but their influence should not be overstated. Second, the reform of health care insurance has increased solidarity on several dimensions (population coverage, material coverage, risk solidarity and income solidarity). We found no evidence of similar effects in long-term care insurance. Third, while the reform of long-term care insurance decreased solidarity on two dimensions (cost coverage and conditional coverage), the reform of health care insurance decreased solidarity on the dimension of cost coverage only. Fourth, because any decrease of cost coverage seems controversial in Dutch health politics, the government has taken steps to mitigate the decrease of cost coverage.

Our study suggests that, at least so far, health care and long-term care have remained largely 'immune' to reforms

Table 4: Overview of the solidarity-effects.

Dimension	Health care insurance	Long-term care insurance
Population coverage	Increased	No change
Material coverage	No change for former sick fund insured people. Increased material coverage possible for former privately insured people	Mixed changes
Cost coverage	Decreased for former sick fund insured. Effects for former privately insured persons contingent on the specific coverage regulations in their policy	Decreased cost coverage but measures to mitigate this effect
Conditional coverage	No change	More conditions
Income solidarity	No changes for former sick fund insured. Increased solidarity for former privately insured people	No change
Risk solidarity	No changes for former sick fund insured. Increased solidarity for former privately insured people	No change

that restrict the scope of solidarity. This result is less surprising than might appear at first sight. Health care is a sensitive issue in Dutch health politics, and the same is true for long-term care, which features a high degree of public support. There was (and probably is) no political majority for reforms that erode solidarity. In other words, the principle of solidarity has worked as a political constraint to health reforms. In this context, it comes as no surprise that the government is working on the (partial) remediation of cost coverage.

The most radical change concerns the provision of social services of long-term care under the revised Social Welfare Act. One explanation for this result is municipalities bear the financial risk of the provision of these services and seek ways to absorb the effect of the government's expenditure cuts that have been sold politically as 'efficiency cuts'. A second and complementary explanation is that social services, such as cleaning, shopping, doing dishes and personal guidance, refer to 'soft needs'. Hence, these services are an easier target for reduction than the 'hard needs' for medical care and long-term care facilities for frail elderly. Also notice the change in wording. Expenses for social services of long-term care are no longer considered medical expenses, as was the case under the former Exceptional Medical Expenses Act, but social welfare expenses. The reform of long-term care insurance was also intended to de-medicalize social services of long-term care.

An important question is how future reforms will influence solidarity in Dutch health care insurance and long-term care insurance. After all, our study only covers a limited period (about two decades) and forecasts are always tricky. However, the political logic of the policy path so far does not make radical changes likely in the near future. In this respect, it should be noted that the budgetary plans of the new government for the period 2017–2021 include an increase of €2 billion to further improve the quality of long-term care in nursing homes.

Solidarity

For our analysis, we developed a multidimensional model of solidarity that was specifically designed to investigate the solidarity-effects of reforms in national health and long-term care insurance. As already pointed out in the section on solidarity, the model leaves various manifestations

of solidarity in social life out of consideration. One aspect of our model of solidarity deserves special attention. It conceptualizes private payments for health care and long-term care as the opposite of solidarity. A decrease in cost coverage is measured as a decrease in solidarity. This conceptualization may be criticized by arguing that solidarity in national health insurance cannot be sustainable without individual responsibility. Following this reasoning, solidarity and individual responsibility are two sides of the same coin. Hence, it is both fair and necessary (to minimize the risk of moral hazard) that patients bear a portion of the costs of health care or long-term care themselves. Which portion they should pay is a matter of political preference.

In the Dutch health system, this view on solidarity is not very popular. Many people consider co-payments for health care and long-term care at odds with solidarity. Popular resistance to co-payments – sometimes framed as a 'fine on illness' – helps to explain the political pressure on the government to remedy cost coverage. This practice suggests that solidarity is also a matter of political culture.

Generalizability

Our analysis is a country-based case study and, hence, does not allow for generalizations. International-comparative research of recent reforms of health care (OECD, 2018) and long-term care (Gori et al., 2018) is required to assess to what extent the Dutch experience is representative for the solidarity-effects of reforms in other countries. Of course, much depends on the initial position of each country (Mosca et al., 2017) and political circumstances. For instance, the solidarity-effects of reforms in long-term care insurance may be quite different in countries with a rather generous system, such as the Netherlands, than in countries with a less generous one.

Our hypothesis is that, so far, reforms have increased solidarity in national health insurance in the Netherlands. In this respect, it is interesting to refer to a comparative study of social health insurance reform in Belgium, Germany, the Netherlands and Switzerland in the 1990s. The authors concluded 'that solidarity in social health insurance has in many respects increased rather than decreased' (Maarse & Paulus, 2003: 610). In her comparative analysis of long-term care reform in France and Germany, Morel concluded that the scope of long-term

care for frail elderly has extended in both countries in response to the ageing of the population (Morel, 2006; see also Doty et al., 2015). Germany also recently extended its public coverage for long-term care (Federal Ministry of Health, 2017). In their analysis of long-term care reforms in six European countries (France, Germany, Italy, the Netherlands, Sweden and the UK), Pavolini and Ranci (2008) concluded that the introduction of new government regulations 'were designed to restructure rather than to reduce welfare programmes' in long-term care.

Contributions to research

This article presented an analytical framework to investigate the solidarity-effects of recent reforms in national health insurance in the Netherlands. For that purpose, we developed an analytical model of solidarity. In our view, the model is fit for international-comparative research of the solidarity effects of ongoing reforms in national health and long-term care insurance.

A great deal of the research of health and long-term care reforms concentrates upon their (potential) effects on health and long-term care expenditures and the organisation of care. Our study contributes to the body of knowledge on their effects on solidarity.

Finally, our study is an empirical one. We abstained from a political judgment of the reforms.

Limitations

This study has several limitations. First, the study is a case study of the Netherlands. International-comparative research is required to get wider insight into the solidarity-effects of ongoing reforms elsewhere and to find out to what extent the Dutch experience corresponds and differs from that of other countries. Systematic comparative research can also increase knowledge on the set of factors mediating these solidarity-effects.

A second limitation concerns our analytical framework. The framework is apt for studying the solidarity-effects of reforms on national health and long-term care insurance. Its focus is on formal arrangements of solidarity. Effects on informal arrangements are beyond the scope of this study.

Third, our study takes only an aggregate view of solidarity effects. More detailed and quantitative research is needed to investigate how the reforms played out for specific groups, for instance the frail elderly, people with a handicap and people with rare diseases.

Conclusions

Reforms of health care insurance and long-term care insurance in the Netherlands had solidarity-effects, but these effects should not be overstated. We found evidence for both increased and decreased solidarity. Health care insurance seems more 'immune' to reductions in solidarity than long-term care insurance. The impact upon solidarity of the reforms for specific groups of people and in the long term requires further investigation.

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Competing Interests

The authors have no competing interests to declare.

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